

WHEAT VARIETIES FOR WESTERN CANADA

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THE MARKET FOR CANADIAN WHEAT

The world produces each year and consumes in round figures about 4,500 million bushels of wheat. These figures do not include China, which it has been roughly estimated produces and consumes about 600 million bushels. Therefore the total amount of wheat produced and consumed by the entire world is probably in excess of 5,000 million bushels per annum.

Most of this wheat is consumed in the country in which it is produced. Some countries, however, produce less than they require and so have to import wheat and wheat flour. Some other countries produce more than they can consume and so they have wheat and wheat flour for export sale. The amount of wheat which is thus imported and exported, most of it across the seas—or which enters into International Trade—is between 700 and 800 million bushels each year. This is the market and the only market that is available for the wheat that Canada cannot consume at home and which she has to sell abroad.

Canada's average wheat production for the last ten years has been 399 million bushels per annum. Her exports or sales abroad for the same ten years have averaged 281 million bushels per annum in the form of wheat and wheat flour, or about 70 per cent of her total production of wheat. The

amount she has exported as wheat has averaged 237 million bushels per annum, and as wheat flour 44 million bushels per annum.

THE CANADIAN WHEAT GROWERS' OPPORTUNITY

With a dozen or more exporting countries keenly competing for the world's wheat market Canada, during the last seven years, has won for herself 37% of this entire trade. The skill and experience of those who market Canadian wheat has had much to do with the attaining of this outstanding success, but the most important factor has been the high quality of the wheat itself coupled with the unequalled system of inspection, grading and certifying by the Inspection Department of the Board of Grain Commissioners which assures that the world's buyers receive precisely the quality grade of Canadian wheat they pay for. So long as the Canadian wheat growers maintain this superior quality in their wheat and produce it economically, so long will Canada not only retain her large share of the world's market, but will even be able to expand it. It has been computed that this superior wheat quality has brought to the Canadian farmer more than 200 million dollars of a premium since Canadian wheat first appeared on the world's markets; but this extra quality and premium can easily be lost unless particular care is taken in production methods. Canadian wheat growers, because of their high intelligence, and the assistance and advice they receive from skilled technical agriculturists, can easily maintain this quality and produce it at a competitive cost if they will bend their energies continually to this end.

FACTORS PRODUCING HIGH QUALITY WHEAT

The soil and climate of the Canadian prairies are able to build the right kind of protein into Canadian wheat, which then becomes high in what is termed "milling and baking value." This quality is prized by the overseas miller who uses "strong" Hard Red Canadian wheat to blend in small quantities with inferior and cheaper wheats which by themselves alone would not make an acceptable nor palatable loaf. Only certain varieties of wheat, however, will respond to our soil and climate and produce high quality. It is important, therefore, for the Canadian wheat grower to use only recommended varieties and furthermore, the one best suited for the soil and climate of his own district. There are at the most only four or five spring wheats suitable for the Canadian prairies, namely—Marquis, Reward, Red Bobs 222 (or Early Triumph), Garnet and Ceres. Surveys indicate, however, that we are producing over twenty varieties, most of them of poor milling and baking value; many fields also contain mixtures of varieties. If high quality is to be maintained all these unsuitable varieties and admixtures must be eliminated and only the most suitable variety grown. This can be done and with but little expense if the necessary steps are taken.

THE MOST SUITABLE WHEAT VARIETIES

I.—Marquis

Marquis is the standard high quality milling wheat of the world and the standard variety for

Western Canada. If four years out of five Marquis will command a No. 1 or No. 2 grade at the local elevator, then no other variety should be considered. In all round money-making qualities for the farmer—milling and baking value—weight per bushel—stiffness of straw—high yield—freedom from shattering—average resistance to disease—moderate earliness of maturity, etc., Marquis is quite in a superior class by itself. Marquis is a production of the Dominion Experimental Farm at Ottawa, and is the result of a cross made, under the direction of Dr. William Saunders, in 1892, between an Indian wheat—Hard Red Calcutta (as female) and Red Fife (as male). It was first sent out for trial on the Canadian Prairies in 1907 and spread rapidly until today it comprises probably 65% of all the wheat grown in Western Canada. Marquis has a somewhat tapered head with a few short awns at the tip, irregular in length. The glumes are smooth, somewhat egg-shaped and have a square shoulder and a rather triangular beak. Under certain soil and climatic conditions, however, such as obtain in the northern brush or park country, in Manitoba, and some years in the eastern portions of Saskatchewan, Marquis may become either piebald or frosted or damaged by rust. In these districts Marquis is not suitable and a different and earlier variety should be used—although many are finding that by using fertilizer Marquis is some 7 days earlier and throws a cleaner kernel.

II.—REWARD WHEAT

Reward wheat is the result of a cross between Marquis and Prelude made at the Dominion

Experimental Farm, Ottawa, in 1912. It is 7 or 8 days earlier than Marquis. Its milling and baking values are excellent—the berry is plump, clear and red, and is seldom pithed or starchy. Reward often brings a No. 1 Hard or No. 1 in districts where Marquis and other sorts usually only command a No. 3 or lower grade. The straw is stiff, the head does not shatter easily, so it is a splendid combine wheat. In wet years it stands up when other varieties go down. It is resistant to many diseases but contains some loose smut, which, however, is rapidly being eliminated by the plant breeder. Reward is lower in yield than either Marquis or Garnet. But it has been found that by heavier than usual seeding the yield of Reward is substantially increased. Reward is now registered with the Canadian Seed Growers' Association, which means that each year better and better seed will be obtainable and that new and higher yielding strains will be produced. Reward wheat is strongly recommended to all who need an earlier variety than Marquis in districts where Reward does well. The head of Reward somewhat resembles Marquis, having the same short tip awns. The glumes are inclined to be dark in color towards the base and are covered with short hairs, whereas the Marquis glume is quite smooth. The spikelets are not so regularly arranged as in Marquis, so that the Reward head has a characteristic ragged or spind appearance.

III.—GARNET WHEAT

Garnet wheat is the result of a cross made at the Dominion Experimental Farm at Ottawa in 1905, between Preston "A" and Rigo "N." It was released for use in 1927. It is 10 days

earlier than Marquis, the yield about as high. The berry is of a nice red color, very seldom piebald or starchy but is not usually so plump as Marquis. The straw is weak and the chaff loose, so that in a wet fall Garnet may go down and sprout in the stock. The flour is slightly yellow and the milling and baking value has been objected to by some Canadian and one or two overseas millers, although neither English nor European continental millers seem, as yet, to have raised any serious objections to the presence of Garnet in No. 2 Northern. The Grain Standards Board have under consideration the separate grading of this variety. At this moment of writing the future of the grading of Garnet is uncertain. It might, therefore, be well for those who find that Reward wheat does well in their district to consider changing from Garnet, or at least to secure a few bushels of good Reward seed and to seed these on a few acres of clean land next spring, so as to be prepared in case Garnet should be degraded. The Garnet head has a few tip awns, short and fine; the glumes are abnormally long and the beak is narrow and sharp, gently in curving, all giving the head a very characteristic appearance.

EARLY TRIUMPH (OR RED BOBS 222)

Early Triumph is a strain of Red Bobs, which in turn was selected in a field of White Bobs (Australian) wheat by Dr. Seager Wheeler. Red Bob 222 is a strain of Red Bobs, selected by the University of Alberta, and is identical with Early Triumph. This variety is as high yielding as Marquis, some seven days earlier and is of equal milling and baking value. It shatters rather

easily and the kernel becomes piebald or starchy in the Northerly brush or park areas. The head is dense and quite smooth or awless. It is a handsome and striking wheat plant and is much used in Northern Alberta.

Ceres

Ceres wheat is a cross between Kota and Marquis, made in 1919 by Professor Waldron of Fargo Experimental Station, North Dakota. Its milling and baking value is good. It is about as early as Marquis but much more resistant to black stem rust, although not completely resistant. It is, however, very susceptible to many other diseases, notably loose smut, bunt, foot rot and leaf rust. The straw is weak and Ceres often goes down. Ceres is only intended to be used in those parts of Manitoba and Eastern Saskatchewan that suffer from black stem rust. Ceres has a fully bearded head, so is easily distinguished in the field.

PRODUCING A QUALITY CROP

Having decided upon the most suitable wheat variety the next step in the production of high quality wheat is the growing of a crop that is reasonably true to variety. This can only be done by using seed that is guaranteed or known to be pure and true. Registered seed, sealed in the sack, is always pure and true to variety. Seed from a certified field is the next best. Either of these cost but very little extra money. The method adopted by many wheat growers is to obtain sufficient registered seed to seed a few acres of clean summerfallow each year, to harvest this carefully, and to use the product of this field to seed the whole farm the next year; or often a

farmer in the district is found who is willing to multiply good registered seed and to make it available to his neighbors at a small premium over elevator price. Such a man is helping his whole district and should be encouraged. All seed of course should be treated for smut and should be carefully cleaned so that there are no weeds or other kinds of grain present, most weeds found on a farm at some time or another having been seeded through the seed drill. Good clean pedigreed seed gives a high quality, high yielding crop and helps to control and eliminate weeds.

Careful growing tests have shown that the poor results sometimes complained of with Reward wheat and other varieties is frequently due to the fact that often very but little real Reward has been present and in many cases it has been found that the seed consisted of an entirely different variety than the one the farmer thought he was growing,—hence the necessity of making sure that seed purchased is really true to the variety desired.

LOWERING PRODUCTION COSTS

History shows that in times of low price levels manufacturers and producers are always induced to seek cheaper methods of production. On their own initiative farmers have almost revolutionized wheat production during the past few years. Little advice or suggestion has been needed. Shallow cultivation by means of the one way disc and cultivator, instead of the usual ploughing, has perhaps been the most outstanding advance in field work in many districts. Better conservation of moisture, better control of weeds, more even plant growth and cheaper working of the soil have resulted from the use of this method. The

combined tiller or cultivator and seeder is claimed by many to cheapen seeding costs, and by its broadcast method of seeding the grain, to produce a more even and better crop. The performing of seeding, summerfallowing and some harvesting operations during two and three shifts a day instead of the usual one, helps work to be finished during the right season, resulting in higher grading and yielding crops. The use of fertilizers also is reducing costs, increasing yields, making maturity earlier, controlling weeds, lessening damage from cutworms and wireworms and bettering grades. More careful treatment of grain for smut, and better cleaning of seed, are all methods adopted by progressive Western Canadian wheat growers to adapt themselves to circumstances whilst the price level remains low.

QUALITY OF FOREIGN WHEATS

Reliable advices recently received from Russia, the Argentine and Australia inform us that these countries are making special efforts to increase the quality of their wheat. Competent authorities, however, are of the opinion that Canadian wheat will always be superior to that of our competitors so long as we pay particular attention to methods of maintaining quality such as are outlined in this pamphlet.

ADDITIONAL PAMPHLETS

The Searle Grain Company has issued helpful pamphlets on *Reward Wheat*, *Management of a Seed Field on a Farm*, *Economy in the Use of Lubricating Oil*, etc., etc. These will be forwarded without charge to any farmer on application to our Head Office or to any Elevator Agent of the Searle Grain Co.

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